REMARKS

Claims 1, 2, 5-19, 21 and 23 are pending. Claims 1, 5, 6 and 18 have been amended. Claims 3, 4, 20 and 22 have been canceled.

Support for the amendment to claim 1 can be found in canceled claims 3 and 4.

Claim 18 has been amended to be in independent form.

No new matter has been added by way of the above-amendment.

Interview

Applicants note with appreciation that the Examiner took the time to discuss the outstanding issues during a telephone conversation with Garth M. Dahlen, Ph.D., Esq. (#43,575) on or about June 9, 2005. The Examiner was helpful in clarifying matters and the Examiner's input was given significant weight in preparing this Reply.

Issues Under 35 USC 112

Claims 1-23 are rejected under 35 U.S.C. 112, 1st paragraph. Applicants respectfully traverse the rejection.

The Examiner has taken the position that the newly added phrase "wherein the non-polymeric organic particles inherently have an intermolecular hydrogen bonding property" adds *new matter* to the disclosure.

In response, Applicants have amended claim 1 by deleting this phrase and inserting the phrase "wherein the non-polymeric organic particles contain at least one functional group selected from the group consisting of amino, amido and metal salt thereof". The Examiner agreed with Dr. Dahlen during the June 2005 telephone Interview that there was clear support for this newly added phrase in canceled claim 4 as originally filed.

In view of the fact that the present invention was in the possession of the present inventors at the instant priority date, withdrawal of the rejection under 35 USC 112, first paragraph is respectfully requested.

Prior Art Based Issues

The following rejections are pending:

a) Claims 20 and 22 are rejected under 35 U.S.C. 102(e) as anticipated by or in the alternative, under 35 U.S.C. 103(a) as obvious over Scott et al;
b) Claims 20 and 22 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Small et al;
c) Claims 1, 2 and 4 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Chapman US Patent No. 4,240,919;
d) Claims 3 and 5 are rejected under 35 U.S.C. 103(a) as obvious over Chapman for the same reason set forth in the previous Office Action;
e) Claims 20 and 22 are rejected under the judicially created doctrine of double patenting over claim 8 of Li et al. U.S. Patent No. 6,620,215; and
f) Claims 20 and 22 are rejected under 35 U.S.C. 102(e) as being anticipated by Li et al.

In view of the cancellation of claims 20 and 22 and the amendment to claim 1 so that claim 1 now recites the subject matter of claim 3, Applicants respectfully submit that each of Rejections a)-c), e) and f) have been rendered ***moot***. Applicants now comment on Rejection d) wherein the Examiner is relying upon the teachings of Chapman for finding the present invention obvious.

Rejection d):

In Rejection d), the Examiner is relying upon the teachings of Chapman. Applicants respectfully submit that Chapman does not render obvious a chemical mechanical planarization abrasive composition, which comprises non-polymeric organic particles having an average particle size of less than 1 μm.

During the June 2005 telephone Interview, the Examiner indicated that he was relying on the teachings of Chapman at column 3, lines 6-19, which reads as follows:

> "Suitable abrasives which can be utilized in the composition of the present invention include titanium dioxide, silica sand, calcium carbonate, calcium phosphate, zirconium silicate, diatomaceous earth, quartz, pumice, pumicite, whiting, perlite, tripoli, **melamine, urea formaldehyde resins**, ground rigid polymeric materials, such as polyurethane foam, feldspar, vermiculite, water absorbant soft abrasives, such as calcium silicate and aluminum silicate. Furthermore, mixtures of these abrasives can be utilized in the compositions so as to provide a balanced composition having both hard and soft abrasives. The preferred abrasives for use in the composition of the present invention are calcium carbonate, aluminum oxide, silica, calcium silicate and mixtures thereof." (Emphasis added).

The Examiner has taken the position that this section teaches that "melamine" can be used as an abrasive particle. Applicants respectfully disagree.

First, Applicants respectfully submit that from the highlighted portion given above, it would be clear to one skilled in the CMP art that Chapman is referring to *melamine formaldehyde resins* **or** *urea formaldehyde resins* as the abrasive particle and not: 1) melamine particles; or 2) urea formaldehyde resin particles. The Examiner will note that upon searching the PTO patent database using the search terms:

spec/("melamine formaldehyde") and ("chemical mechanical")

on August 18, 2005, there were 114 hits. During a random sampling of the 114 hits, examples of the use of *melamine formaldehyde resins* **in addition to** *urea formaldehyde resins* for abrasive particles in chemical mechanical planarization were found in U.S. 6,322,427 at column 9, lines 6-7, U.S. 6,435,945 at column 5, line 14 and U.S. 6,887,136 at column 6, lines 14-15.

Accordingly, each of the abrasive particles in Chapman are either **in**organic based or are **polymeric** organic particles, and Chapman fails to teach or fairly suggest a chemical mechanical planarization abrasive composition, which comprises non-polymeric organic particles as an abrasive material.

Second, even assuming *arguendo*, that Chapman does teach that melamine could be used in particle form (which he does not), Applicants respectfully submit that Chapman fails to teach or fairly suggest that the melamine particles have an average particle size of ***less than*** 1 μm.

Chapman generically teaches that the abrasive particles have sizes in the range of 1 to 250 μm, see column 3, lines 1-5. Chapman does not fairly suggest the use of abrasive particles having an average size of less than 1 μm. In fact it is clear from the disclosure that Chapman prefers particles much larger than 1 μm. Chapman teaches that it is possible to have a small percentage of the abrasive particles having a size of larger 250 μm, see column 3, lines 1-5. Also, in the only examples of Chapman which mention the size of the particles (i.e., Example 1, Comparative Example 1 and Example 4), the abrasive is taught to pass through a 325 mesh filter. It is Applicants' understanding that a 325 mesh filter has a sieve opening of 44 μm. As such, the abrasive particles of Chapman would have an average size which is much bigger than that described in present claim 1.

Furthermore, the skilled artisan would not be motivated to reduce the size of the abrasive particles to have an average particle size of less than 1 μm, in view of the fact that the abrasive particles of Chapman are to be used in a scouring cleaning composition useful in the home, see column 1, lines 7-9. Larger particles would increase the effectiveness of the scouring cleaning composition for removal of dirt and other unwanted messes in the home from surfaces that do not need to be smooth on a molecular scale. This is in distinction to the inventive composition, which is used for chemical mechanical planerization wherein such large particles would have a deleterious effect on the function of the planarized semiconductor.

As the MPEP directs, all the claim limitations must be taught or suggested by the prior art to establish a *prima facie* case of obviousness. See MPEP § 2143.03. In view of the fact that

Chapman fails to teach or fairly suggest a chemical mechanical planarization abrasive composition, which comprises non-polymeric organic particles having an average particle size of less than 1 μm, withdrawal of Rejection d) is respectfully requested.

The present application well-describes and claims patentable subject matter. The favorable action of allowance of the pending claims and passage of the application to issue is respectfully requested.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Garth M. Dahlen, Ph.D., Esq. (Reg. No. 43,575) at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

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Respectfully submitted,

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